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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,370	09/26/2003	Dale E. Husted	IDE.P0001	6868

7590 09/21/2004

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EXAMINER

PICKARD, ALISON K

ART UNIT PAPER NUMBER

3676

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/670,370	Applicant(s) HUSTED, DALE E.	
	Examiner Alison K. Pickard	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Due to applicant's amendments to the claims (i.e. removal of "of oil from a bearing housing" in the preamble), "the oil" and "the bearing housing" limitations in the body of the claims (for example in claim 1, last paragraph) lack antecedent basis. It is unclear if Applicant intends this seal to be used with oil from a bearing housing.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNickle in view of Hoffman in view of Wheeler.

In column 1, line 39 through column 2, line 10, McNickle discloses a labyrinth seal with a windback configuration comprising a first face, a second face, an exterior surface, and an interior surface with a thread pattern. The seal thread/teeth are formed such that the oil flows in one direction back to the bearing and the pressure drop is divided across the teeth.

McNickle does not disclose the seal is segmented, i.e. in two halves. Hoffman teaches a labyrinth seal having plural teeth. Hoffman teaches making the seal segmented in two halves for easier installation. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal of McNickle by making it segmented for easier installation as taught by Hoffman.

McNickle does not disclose the configuration of the thread pattern/teeth required by the claims (e.g. that the first and second sides of the teeth are slanted toward the first face or that the first side has a steeper incline and angle than the second side). Wheeler teaches a labyrinth seal having a thread pattern with plural teeth. The teeth have first and second sides and connecting sides (teeth have a thickness and therefore have trailing and leading edges). Wheeler teaches making the teeth slanted toward the higher pressure. Wheeler teaches that the sides of the teeth are angled such that the first side is steeper and has a greater angle (e.g. a) than the second side (e.g. b). Wheeler teaches that this configuration reduce leakage by forcing the oil back toward the source before progressing along the other teeth (see page 2, lines 1-17 and 144-150). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to slant the teeth toward the higher pressure and make the teeth sides such that the first side is steeper and has a greater angle than the second side to reduce leakage and improve the seal as taught by Wheeler.

Regarding claim 12, McNickle does not disclose the claimed height ranges and clearances. Using these ranges is considered a design choice. It is not considered inventive to discover the workable or optimum ranges by routine experimentation. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Further, such ranges are known as evidenced by Marshall '019

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(i.e. clearance range). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the claimed height and clearance ranges as a matter of choice in design.

Allowable Subject Matter

5. Claim 19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

6. Claims 8, 9, and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 6-28-04 have been fully considered but they are not persuasive.

McNickle discloses (under the background section) a labyrinth seal with a thread pattern that has a pressure drop over the teeth (see col. 1, lines 58-64). Bloch, for example, also shows a seal with a thread pattern that would have a pressure drop.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 703-305-0882. The examiner can normally be reached on M-F (10-7:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 703-306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Alison K. Pickard
Primary Examiner
Art Unit 3676

AP